

REMARKS

All pending claims have been rejected in the Office Action of June 19, 2007.

More specifically: claims 1-53 are rejected under 35 U.S.C. 102(b) as anticipated by Gomyo et al. US Patent No. 5,778,948 (hereinafter "Gomyo"). Separately, claims 21-23, 25, 27-28, 40, 44-45, 49 and 50 stand rejected under 35 U.S.C. 112, first paragraph based on the alleged failure to show in the drawings structure found in those rejected claims. The Examiner's basis for that rejection is set forth in the objections to the drawings. Specifically, it is asserted that the drawings fail to disclose "the metering path (claims 21, 22); transmitter/receiver system (claim 23); device for counting drops (claim 25); optical means (claim 27); image processing (claim 28); camera (claims 40, 50); light barrier (claims 44, 45); [and] piezo actuator (claim 49)."

Office Action at 2. Applicants have amended independent claim 1 to incorporate the limitations of dependent claims 2, 8 and 18 and have amended independent claim 34 to incorporate the limitations of claims 35 and 36. Those dependent claims have been canceled. Further, as explained below, the drawings and specification do in fact have support for all claim elements. In view of the amendments to the claims and remarks, Applicants respectfully request that the claim rejections be reconsidered. Applicants submit that the claims as amended are patentable over the cited prior art.

Response to 35 USC 112, first paragraph and drawing rejections

The Office Action asserts that the drawings fail to disclose the following: "the metering [sic: measuring] path (claims 21, 22); transmitter/receiver system (claim 23); device for counting drops (claim 25); optical means (claim 27); image processing (claim 28); camera (claims 40, 50); light barrier (claims 44, 45); [and] piezo actuator (claim 49)." Office Action at 2. In response, Applicants identify support for each element either in the drawings and

specification with reference to Applicants' application as published under publication number US 2004/0256178.

Claims 21 and 22 recite a measuring path. The specification explains, inter alia, with respect to a preferred embodiment that the "counting device 150 has, for example, a measuring line 154, which is disposed in the vicinity of the outlet of the nozzle 38. The drops of lubricant which fly through the measuring line 154 are counted." US 2004/0256178 at [0111].

Claim 23 recites transmitter-receiver system. The specification clearly states that a transmitter 158 and a receiver 160 are present. US 2004/0256178 at [0113]; also See Fig. 4. If necessary, Applicants are willing to amend claim to separately identify a transmitter and receiver.

Claim 25 recites a device for counting drops. Figure 4 shows the device for counting drops which has the reference numeral 150 in the specification. US 2004/0256178 at [0111] and [0112].

Claim 27 recites optical means. Claims 40 and 50 recite a camera. In a preferred embodiment, the apparatus is shown as having a camera. See Fig. 4. The specification explains, in part, "a digital camera 164 may also be provided." US 2004/0256178 at [0118].

Claim 28 recites image processing. Fig. 4 shows the control device 166 which receives signals from the digital camera 164 and thereby can carry out image processing. See US 2004/0256178 at [0118].

Claims 44 and 45 recite a light barrier device. In a preferred embodiment, the light barrier device of claims 44 and 45 has the reference numeral 156 and is shown in Fig. 4. US 2004/0256178 at [0113].

Claim 49 recites a piezo actuator. In a preferred embodiment, the piezo actuator is shown in Fig. 2 with the reference numeral 40. US 2004/0256178 at [0083].

For the above reasons, Applicants respectfully submit the rejection of the claims and to the drawings have been overcome.

Rejection based on U.S. 5,778,948 to Gomyo et al

In rejecting claims 1-53 based on Gomyo, the Office Action characterizes Gomyo in the following way:

Gomyo et al. shows the claimed subject matter where a bearing is filled with lubricant in a vacuum chamber (50), the lubricant is dispensed from a container (figure 1b) which drops droplets of oil in a predetermined pattern, the number of drops and; therefore, the amount of lubricant being dispensed is controlled using visual devices (eyes); once the bearing has been filled, it is removed from the vacuum chamber and returned to ambient pressure; the lubricant being in a space between the bearing members (see figure 5 where lubricant 3' is between the bearing members 1 and 2).

June 19, 2007 Office Action at 4.

As is evident from the above, Gomyo has been broadly applied to a subset of the claimed subject matter and does not encompass all the claimed elements recited in claims 1-53. Thus, the application of Gomyo against all of claims 1-53 is facially deficient. However, in an effort to further distinguish the pending claims over the cited prior art, Applicants have amended independent claims 1 and 34 to include elements that were formerly found in the dependent claims and which are not present in the cited prior art.

Specifically, claim 1 has been amended to recite a method of filling a bearing gap of a hydrodynamic bearing with a lubricant comprising the following steps: producing drops of lubricant in a defined manner; wherein the production of drops of lubricant is controlled with

respect to the drop size; applying the drops of lubricant in a controlled manner by firing them from a lubricant drop generator to a defined region of the bearing to be filled; wherein said defined region is at least one of a bearing gap region between a shaft and a shaft mount and a region which is in fluidic connection with the bearing gap; counting the drops of lubricant; and determining the degree of filling of the bearing gap based on counting the drops of lubricant. Similarly, claim 34 is directed to an apparatus for introducing lubricant into the bearing gap between a shaft and a shaft mount of a hydrodynamic bearing, comprising: a lubricant drop generator directing drops of lubricant in a defined manner into at least one of a bearing gap region and a region in fluidic connection with the bearing gap; wherein drops of lubricant of a defined volume are generated by the lubricant drop generator; and a counting device configured to count the drops of lubricant. As discussed below, Gomyo fails to disclose each of the elements of amended independent claims 1 and 34.

According to proposed claim 1, the drops of lubricant are produced in a defined manner with controlled drop size. Similarly, in claim 34, a drop generator is used to generate drops of lubricant having a defined volume. Gomyo discloses a method for inserting fluid in a bearing device. However, it fails to disclose each of the recited steps in claim 1 and components or elements of claim 34. In Gomyo, the method, as shown for example in Fig. 1b, includes placing a predetermined amount of bearing fluid 3 in an oil storage area 1a formed between the shaft 2 and the motor frame 1 by an instrument, such as a robot, which is not shown (column 5, lines 49 to 53) Gomyo does not disclose any other details concerning the method of filling and the figures are only schematic drawings that provides no insight into the method of filing employed in Gomyo. Gomyo et al. does not disclose or suggest the production of drops of lubricant in a controlled manner with respect to the drop size. Further, as best can be

determined, the drops in Gomyo fall under the influence of gravity into a filling region. In the claimed invention, the drops are applied in a controlled manner by firing them from a lubricant drop generator to a defined region. This not just a free fall. Further, Gomyo et al. does not disclose or remotely suggest to count the drops of lubricant and determine the degree of filling of the bearing gap based on counting the drops of lubricant.

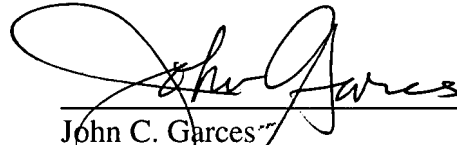
As explained in Applicants' application, the filling process is a very sensitive process. Unlike Gomyo, the claimed filling process permits the filling amount to be adjusted within very narrow limits (i.e., precisely to the drop). The filling process can be monitored and documented in an easy way. The degree of filling of the bearing gap can be determined at any point in time since the drops of lubricant are produced in a defined manner and are applied to a defined region in a controlled manner. None of these advantages are obtainable from the method in Gomyo.

Accordingly, Applicants request that the Examiner reconsider these rejections in view of the amendments and the comments as set forth above and allow pending claims 1, 3-7, 9-34, and 37-53.

For at least the reasons set forth above, Applicants respectfully submit that this patent application, as amended, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested. The Examiner is urged to telephone Applicants' undersigned counsel at the number noted below if it will advance the prosecution of this application, or with any suggestion to resolve any condition that would impede allowance. In the event that any extension of time is required, Applicants petition for that extension of time required to make this response timely. Kindly charge any additional fee, or credit any surplus, to Deposit Account No. 50-0675, Order No.057517/0054.

Respectfully submitted,

Date: October 18, 2007

A handwritten signature in dark ink, appearing to read "John C. Garces", is written over a horizontal line.

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